

Serial No. 10/673,143

Docket No.: 1293.1829

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

Young-woo LEE et al.

Serial No. 10/673,143

Group Art Unit: 2627

Confirmation No. 3823

Filed: September 30, 2003

Examiner: Peter Vincent AGUSTIN

For: APPARATUS, METHOD, AND MEDIUM INCLUDING COMPUTER READABLE CODE  
FOR DISCRIMINATING RECORDING MEDIUM TYPE

**APPEAL BRIEF UNDER 37 CFR §41.37**

**Mail Stop:** Appeal Brief-Patents

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

In a Notice of Appeal filed December 24, 2009, the Appellant appealed the Examiner's rejections of claims 1-8, 15-18, 27-33, and 39-44, asserted in the Final Office Action mailed July 24, 2009, with the requisite fee set forth in 37 CFR § 41.20(b)(2).

The due date for this Appeal Brief is February 24, 2010, with a petition for a two-month extension of time, thereby extending the due date to April 24, 2010, which being a Saturday renders this response timely filed on April 26, 2010. The Appellant's Brief with the requisite fee set forth in 37 CFR § 1.17 is submitted herewith. If any further fees are required in connection with this filing, please charge our Deposit Account No. 19-3935.

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I. REAL PARTY IN INTEREST

The real party in interest is Samsung Electronics Co., Ltd., the assignee of the subject application.

## II. RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's legal representatives, and assignee are not aware of any prior or pending appeals or interferences which directly affect or are directly affected by, or have a bearing, on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-18 and 22-44 are pending, with claims 1, 6, 7, 8, 9, 15, 22, 27, and 34 being independent claims. Claims 19-21 have been cancelled.

Only claims 1-8, 15-18, 27-33, and 39-44 are currently under consideration, as claims 9-14, 22-26, and 24-38 have been withdrawn from consideration.

Accordingly, the outstanding rejection of claims 1-8, 15-18, 27-33, and 39-44 is being appealed. The appealed independent claims are claims 1, 6, 7, 8, 15, and 27, and the appealed dependent claims are claims 2-5, 16-18, 28-33, and 39-44.

Claims 1-8, 15-18, 27-33, and 39-44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over US Publication 2002/0075780 by Ogihara et al..

#### IV. STATUS OF AMENDMENTS

A Final Office Action, confirming entry of the amendments to claims 1, 6, 7, 8, 15, 27, 31-33, and 36-44 presented in the Amendment filed April 28, 2009, was mailed on July 24, 2009. After Final Responses, without amendments, traversing the rejections of the Final Office Action were filed on October 20, 2009 and November 24, 2009. Both After Final Responses appear to have been entered based upon respectively issued Advisory Actions of October 29, 2009 and December 9, 2009. A Notice of Appeal was timely filed on December 24, 2009, with a petition for a two-month extension of time.

Accordingly, the claims and specification are as presented in the latest After Final Amendment of November 24, 2009.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claims being appealed are 1-8, 15-18, 27-33, and 39-44. The appealed independent claims are claims 1, 6, 7, 8, 15, and 27, and the appealed dependent claims are claims 2-5, 16-18, 28-33, and 39-44. Below, claim text is presented in italics, and claim support is non-italicized.

A. Independent claim 1

i. Full claim 1 recitation:

1. *A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;  
a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and  
a system controller to discriminate the recording medium type of the recording medium by comparing the wobble amplitude with a pre-set wobble amplitude reference value.*

ii. Claim 1 feature recitations:

1. *A recording medium type discriminating apparatus, comprising:*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, and paragraph [0025].

Paragraph [0025], in a non-limiting example, states:

"FIG. 1 is a block diagram of a disc drive including an apparatus for discriminating a type of disc according to an embodiment of the present invention. Referring to FIG. 1, the disc drive includes an optical detector 101, a radio frequency (RF) amplifier 110, a wobble amplitude detector 120, a system controller 130, and a servo controller 140."

*a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;*

**Support:** See, by way of example and not limitation, FIG. 1, RF amplifier 110, and paragraphs [0027]-[0028] of the present application.

Paragraphs [0027]-[0028], in a non-limiting example, state:

"The RF amplifier 110 includes a current-to-voltage converter 111 and a push-pull operator 112. Since the optical detector 101 has a four-sectioned structure, the current-to-voltage converter 111 is comprised of four amplifiers 111\_1 through 111\_4. The amplifiers 111\_1 through 111\_4 convert output signals of corresponding photodiodes of the optical detector 101 to voltage values. That is, electrical signals output from a photodiode A are converted to voltage values through the amplifier 111\_1, electrical signals output from a photodiode B are

converted to voltage values through the amplifier 111\_2, electrical signals output from a photodiode C are converted to voltage values through the amplifier 111\_3, and electrical signals output from a photodiode D are converted to voltage values through the amplifier 111\_4."

"The push-pull operator 112 includes adders 112\_1 and 112\_2 and a subtracter 112\_3. The adder 112\_1 adds output signals of the amplifiers 111\_1 and 111\_2, the adder 112\_2 adds output signals of the amplifiers 111\_3 and 111\_4, and the subtracter 112\_3 subtracts an output signal of the adder 112\_1 from an output signal of the adder 112\_2. Through these calculating operations, a push-pull signal Spp corresponding to light output from the optical detector 102 is obtained."

*a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and*

**Support:** See, by way of example and not limitation, FIG. 1, wobble amplitude detector 120, and paragraph [0029] of the present application.

Paragraph [0029], in a non-limiting example, states:

"The wobble amplitude detector 120 detects a peak-to-peak value of the push-pull signal Spp output from the RF amplifier 110. In a case where a groove wobble is formed on a disc as shown in FIG. 2, the peak-to-peak value detected by the push-pull signal Spp corresponds to the peak-to-peak value "L". The peak-to-peak value can be detected in a conventional method of detecting a peak-to-peak value of a sine wave. The detected wobble amplitude is then provided to the system controller 130."

*a system controller to discriminate the recording medium type of the recording medium by comparing the wobble amplitude with a pre-set wobble amplitude reference value.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraph [0030] of the present application.

Paragraph [0030], in a non-limiting example, states:

"The system controller 130 controls the disc drive to enable tracking and focusing modes via the servo controller 140 and, then, compares the wobble amplitude provided from the wobble amplitude detector 120 with a reference value. The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm. As a result of the comparison, if the wobble amplitude is higher than the reference value, the system controller 130 determines that the disc inserted in the disc drive is a DVD(+) type disc. However, if the wobble amplitude is not higher than the reference value, the system controller 130 determines that the disc inserted in the disc drive is a DVD(-) type disc."



B. Dependent claim 2

2. *The apparatus of claim 1, wherein the RF amplifier detects a push-pull signal by determining an amount of the reflected light and provides the detected push-pull signal to the wobble amplitude detector.*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, illustrating an optical detector with four photodiodes, amplifiers AMP1-4, and adders 112\_1, 112\_3, and 112\_3, and the output push-pull signal Spp. See the present application in paragraphs [0027]-[0028].

C. Dependent claims 3 and 4:

3. *The apparatus of claim 2, wherein the wobble amplitude detector detects a peak-to-peak value of the output signal of the RF amplifier and identifies the detected peak-to-peak value as the wobble amplitude.*

4. *The apparatus of claim 1, wherein the wobble amplitude detector detects a peak-to-peak value of the output signal of the RF amplifier and identifies the detected peak-to-peak value as the wobble amplitude.*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, wobble amplitude detector 120, and the present application in paragraph [0029].

D. Dependent claim 5

5. *The apparatus of claim 1, wherein the system controller determines that the recording medium is a DVD(+) type recording medium when the wobble amplitude is higher than the reference value and that the recording medium is a DVD(-) type recording medium when the wobble amplitude is not higher than the reference value.*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, wobble amplitude detector 120, and the present application in paragraph [0029].

E. Independent claim 6

i. Full claim 6 recitation:

6. *A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;  
a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and  
a system controller to discriminate the recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is about 16 nm.*

ii. Claim 6 feature recitations:

6. *A recording medium type discriminating apparatus, comprising:*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, and paragraph [0025].

*a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;*

**Support:** See, by way of example and not limitation, FIG. 1, RF amplifier 110, and paragraphs [0027]-[0028] of the present application.

*a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and*

**Support:** See, by way of example and not limitation, FIG. 1, wobble amplitude detector 120, and paragraph [0029] of the present application.

*a system controller to discriminate the recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is about 16 nm.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraph [0030] of the present application.

In particular, see Paragraph [0030], in a non-limiting example, which in part states:

"The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm."

Here, paragraph [0030] particularly exemplifies that the range above 14nm and below 18 nm would be the delineating determiners for determining whether the detected wobble amplitude is representative of the DVD-R/-RW disc or the DVD+R/+RW disc. With 16nm being the middle of 14nm and 18nm, the specification supports the claimed reference value being "about 16nm."

F. Independent claim 7

i. Full claim 7 recitation:

7. *A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;  
a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and  
a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is less than 18 nm.*

ii. Claim 7 feature recitations:

7. *A recording medium type discriminating apparatus, comprising:*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, and paragraph [0025].

*a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;*

**Support:** See, by way of example and not limitation, FIG. 1, RF amplifier 110, and paragraphs [0027]-[0028] of the present application.

*a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and*

**Support:** See, by way of example and not limitation, FIG. 1, wobble amplitude detector 120, and paragraph [0029] of the present application.

*a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is less than 18 nm.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraph [0030] of the present application.

In particular, see Paragraph [0030], in a non-limiting example, which in part states:

"The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm."

Here, paragraph [0030] particularly exemplifies that the range above 14nm and below 18 nm would be the delineating determiners for determining whether the detected wobble amplitude is representative of the DVD-R/-RW disc or the DVD+R/+RW disc. Thus, the specification supports that when the reference value is less than 18nm the detected wobble amplitude would represent a DVD-R/-RW disc, and represent the DVD+R/+RW otherwise.

G. Independent claim 8

i. Full claim 8 recitation:

8. *A recording medium type discriminating apparatus, comprising:*

*a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;*

*a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and*

*a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is greater than 14 nm.*

ii. Claim 8 feature recitations:

8. *A recording medium type discriminating apparatus, comprising:*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, and paragraph [0025].

*a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;*

**Support:** See, by way of example and not limitation, FIG. 1, RF amplifier 110, and paragraphs [0027]-[0028] of the present application.

*a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and*

**Support:** See, by way of example and not limitation, FIG. 1, wobble amplitude detector 120, and paragraph [0029] of the present application.

*a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is greater than 14 nm.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraph [0030] of the present application.

In particular, see Paragraph [0030], in a non-limiting example, which in part states:

"The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm."

Here, paragraph [0030] particularly exemplifies that the range above 14nm and below 18 nm would be the delineating determiners for determining whether the detected wobble amplitude is representative of the DVD-R/-RW disc or the DVD+R/+RW disc. Thus, the specification supports that when the reference value is greater than 14nm the detected wobble amplitude would represent a DVD+R/+RW disc, and represent the DVD-R/-RW otherwise.

H. Independent claim 15

i. Full claim 15 recitation:

15. *A recording medium type discriminating method, comprising:  
detecting only one amplitude of a wobble formed on a recording medium  
using light reflected from the recording medium to discriminate a recording  
medium type of the recording medium; and  
discriminating the recording medium type of the recording medium by*

*comparing the detected wobble amplitude with a pre-set wobble amplitude reference value.*

ii. Claim 15 feature recitations:

15. *A recording medium type discriminating method, comprising:*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, and paragraph [0025].

Paragraph [0025], in a non-limiting example, states:

"FIG. 1 is a block diagram of a disc drive including an apparatus for discriminating a type of disc according to an embodiment of the present invention. Referring to FIG. 1, the disc drive includes an optical detector 101, a radio frequency (RF) amplifier 110, a wobble amplitude detector 120, a system controller 130, and a servo controller 140."

*detecting only one amplitude of a wobble formed on a recording medium using light reflected from the recording medium to discriminate a recording medium type of the recording medium; and*

**Support:** See, by way of example and not limitation, FIG. 1, wobble amplitude detector 120, and paragraphs [0029] and [0033] of the present application.

Paragraphs [0029] and [0033], in a non-limiting example, respectively state:

"The wobble amplitude detector 120 detects a peak-to-peak value of the push-pull signal Spp output from the RF amplifier 110. In a case where a groove wobble is formed on a disc as shown in FIG. 2, the peak-to-peak value detected by the push-pull signal Spp corresponds to the peak-to-peak value "L". The peak-to-peak value can be detected in a conventional method of detecting a peak-to-peak value of a sine wave. The detected wobble amplitude is then provided to the system controller 130."

"In operation 301, the system controller 130 enables tracking and focusing modes of the disc drive. The focusing and tracking modes are then controlled in a conventional way. In operation 302, the system controller 130 detects the wobble amplitude of the disc from the reproduced push-pull signal Spp."

*discriminating the recording medium type of the recording medium by comparing the detected wobble amplitude with a pre-set wobble amplitude reference value.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraphs [0030] and [0034]-[0035] of the present application.

Paragraphs [0030], [0034], and [0035], in a non-limiting example, respectively state:

"The system controller 130 controls the disc drive to enable tracking and focusing modes via the servo controller 140 and, then, compares the wobble amplitude provided from the wobble amplitude detector 120 with a reference

value. The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm. As a result of the comparison, if the wobble amplitude is higher than the reference value, the system controller 130 determines that the disc inserted in the disc drive is a DVD(+) type disc. However, if the wobble amplitude is not higher than the reference value, the system controller 130 determines that the disc inserted in the disc drive is a DVD(-) type disc."

"In operation 303, the system controller 130 compares the detected wobble amplitude with the aforementioned reference value. The reference value is determined as described above, with reference to FIG. 1. If it is determined in operation 303 that the detected wobble amplitude is higher than the reference value, the system controller 130 determines in operation 305 that the disc inserted in the disc drive is a DVD(+) type disc."

"However, if it is determined in operation 303 that the detected wobble amplitude is not higher than the reference value, the system controller 130 determines in operation 304 that the disc inserted into the disc drive is a DVD(-) type disc."

I. Dependent claim 16

16. *The method of claim 15, wherein the discrimination of the recording medium type of the recording medium includes determining that the recording medium is a DVD(+) type recording medium when the amplitude of the wobble is higher than the reference value and that the recording medium is a DVD(-) type recording medium when the amplitude of the wobble is not higher than the reference value.*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, wobble amplitude detector 120, and the present application in paragraphs [0029], [0034], and [0035].

J. Dependent claims 17 and 18

17. *The method of claim 16, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected RF (radio frequency) signal, corresponding to an amount of light reflected from the recording medium, and identifying the amplitude of the wobble as being the peak-to-peak value.*

18. *The method of claim 15, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected radio frequency (RF) signal, corresponding to an amount of light reflected from the recording medium; and identifying the amplitude of the wobble as being the peak-to-peak value.*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, wobble amplitude detector 120, and the present application in paragraph [0029].

K. Independent claim 27

i. Full claim 27 recitation:

27. *A storage medium comprising computer readable code to control a*

*computer to perform a recording medium type discrimination method, the method:*  
*detecting only one amplitude of a wobble formed on a recording medium*  
*using light reflected from the recording medium to discriminate a recording*  
*medium type of the recording medium; and*  
*discriminating the recording medium type of the recording medium by*  
*comparing the detected wobble amplitude with a pre-set wobble amplitude*  
*reference value.*

ii. Claim 27 feature recitations:

27. *A storage medium comprising computer readable code to control a computer to perform a recording medium type discrimination method, the method:*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, and paragraphs [0025] and [0047].

Paragraph [0025], in a non-limiting example, states:

"FIG. 1 is a block diagram of a disc drive including an apparatus for discriminating a type of disc according to an embodiment of the present invention. Referring to FIG. 1, the disc drive includes an optical detector 101, a radio frequency (RF) amplifier 110, a wobble amplitude detector 120, a system controller 130, and a servo controller 140."

Paragraph [0047], in a non-limiting example, in part states:

"Further, embodiments of the present invention may be controlled by a general purpose digital computer, or computers, by running computer readable code from a medium,..."

*detecting only one amplitude of a wobble formed on a recording medium using*  
*light reflected from the recording medium to discriminate a recording medium type of the*  
*recording medium; and*

**Support:** See, by way of example and not limitation, FIG. 1, wobble amplitude detector 120, and paragraphs [0029] and [0033] of the present application.

*discriminating the recording medium type of the recording medium by*  
*comparing the detected wobble amplitude with a pre-set wobble amplitude*  
*reference value.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraphs [0030] and [0034]-[0035] of the present application.

L. Dependent claim 28

28. *The medium of claim 27, wherein the discrimination of the recording medium type of the recording medium includes determining that the recording medium is a DVD(+) type recording medium when the amplitude of the wobble is higher than the reference value and that the recording medium is a DVD(-) type recording medium when the amplitude of the wobble is not higher than the reference value.*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, wobble amplitude detector 120, and the present application in paragraphs [0029], [0034], and [0035].

M. Dependent claims 29 and 30

29. *The medium of claim 28, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected RF (radio frequency) signal, corresponding to an amount of light reflected from the recording medium, and identifying the amplitude of the wobble as being the peak-to-peak value.*

30. *The medium of claim 27, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected radio frequency (RF) signal, corresponding to an amount of light reflected from the recording medium, and identifying the amplitude of the wobble as being the peak-to-peak value..*

**Support:** See, by way of example and not limitation, the present application at FIG. 1, wobble amplitude detector 120, and the present application in paragraph [0029].

N. Dependent claims 31, 39, and 42

As only an example, dependent claim 31 recites:

31. *The medium of claim 27, wherein the pre-set wobble amplitude reference value is about 16 nm.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraph [0030] of the present application.

In particular, see Paragraph [0030], in a non-limiting example, which in part states:

"The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm."

Here, paragraph [0030] particularly exemplifies that the range above 14nm and below 18 nm would be the delineating determiners for determining whether the detected wobble amplitude is representative of the DVD-R/-RW disc or the DVD+R/+RW disc. With 16nm being the middle of 14nm and 18nm, the specification supports the claimed reference value being "about 16nm."

O. Dependent claims 32, 40, and 43

As only an example, dependent claim 32 recites:

32. *The medium of claim 27, wherein the pre-set wobble amplitude reference value is less than 18 nm.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraph [0030] of the present application.



In particular, see Paragraph [0030], in a non-limiting example, which in part states:

"The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm."

Here, paragraph [0030] particularly exemplifies that the range above 14nm and below 18 nm would be the delineating determiners for determining whether the detected wobble amplitude is representative of the DVD-R/-RW disc or the DVD+R/+RW disc. Thus, the specification supports that when the reference value is less than 18nm the detected wobble amplitude would represent a DVD-R/-RW disc, and represent the DVD+R/+RW otherwise.

P. Dependent claims 33, 41, and 44

As only an example, dependent claim 33 recites:

33. *The medium of claim 27, wherein the pre-set wobble amplitude reference value is greater than 14 nm.*

**Support:** See, by way of example and not limitation, FIG. 1, system controller 130, and paragraph [0030] of the present application.

In particular, see Paragraph [0030], in a non-limiting example, which in part states:

"The reference value is determined in consideration of the facts that the wobble amplitude of a DVD-R/-RW disc is in the range of 7 to 14 nm and that of a DVD+R/+RW disc is in the range of 18 to 30 nm."

Here, paragraph [0030] particularly exemplifies that the range above 14nm and below 18 nm would be the delineating determiners for determining whether the detected wobble amplitude is representative of the DVD-R/-RW disc or the DVD+R/+RW disc. Thus, the specification supports that when the reference value is greater than 14nm the detected wobble amplitude would represent a DVD+R/+RW disc, and represent the DVD-R/-RW otherwise.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

In the Final Office Action mailed July 24, 2009, the Examiner rejected claims 1-8, 15-18, 27-33 and 39-44 under 35 USC §103(a) as being unpatentable over Ogihara, U.S. Publication No. 2002/0075780. Appellant specifically requests review of the following:

1. Independent claims 1, 2, 15, and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ogihara.

At issue is whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. §103(a) in the rejection of claims 1, 2, 15, and 27. At further issue is whether it would have been obvious to modify Ogihara as proposed by the Examiner in the rejection of claims 1, 2, 15, and 27.

2. Dependent claims 5, 16, and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ogihara.

At issue is whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. §103(a) in the rejection of claims 5, 16, and 28. At further issue is whether it would have been obvious to modify Ogihara as proposed by the Examiner in the rejection of claims 5, 16, and 28.

3. Dependent claims 3-4, 17-18, and 29-30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ogihara.

At issue is whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. §103(a) in the rejection of claims 3-4, 17-18, and 29-30. At further issue is whether it would have been obvious to modify Ogihara as proposed by the Examiner in the rejection of claims 3-4, 17-28, and 29-30.

4. Independent claim 6 and dependent claims 31, 39, and 42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ogihara.

At is whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. §103(a) in the rejection of claims 6, 31, 39, and 42. At further issue is whether it would have been obvious to modify Ogihara as proposed by the Examiner in the rejection of claims 6, 31, 39, and 42.

5. Independent claim 7 and dependent claims 32, 40, and 43 stand rejected under

35 U.S.C. §103(a) as being unpatentable over Ogihara.

At issue is whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. §103(a) in the rejection of claims 7, 32, 40, and 43. At further issue is whether it would have been obvious to modify Ogihara as proposed by the Examiner in the rejection of claims 7, 32, 40, and 43.

6. Independent claim 8 and dependent claims 33, 41, and 44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ogihara.

At issue is whether the Examiner has established a prima facie case of obviousness under 35 U.S.C. §103(a) in the rejection of claims 8, 33, 41, and 44. At further issue is whether it would have been obvious to modify Ogihara as proposed by the Examiner in the rejection of claims 8, 33, 41, and 44.

## VII. ARGUMENT

Independent claims 1, 6-8, 15, and 27 were finally rejected under 35 U.S.C. §103(a) as being unpatentable over Ogihara, U.S. Publication No. 2002/0075780. Dependent claims 2-5, 16-18, 28-33, and 39-44 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ogihara.

All arguments are directed to the grounds of rejection. All citations to the "Final Office Action" refer to the Final Office Action mailed July 24, 2009.

Ogihara, U.S. Publication No. 2002/0075780, was relied upon in the rejection of claims 1-8, 15-18, 27-33, and 39-44 under 35 U.S.C. §103(a) in the Final Office Action.

Ogihara sets forth two primary embodiments for detecting a optical medium type currently being evaluated, a first where detection levels of two band-pass filter samples of a push-pull signal are compared to each other (as shown in FIG. 3 of Ogihara), and a second where wobble frequencies of two samples are compared to each other (as shown in FIG. 5 of Ogihara).

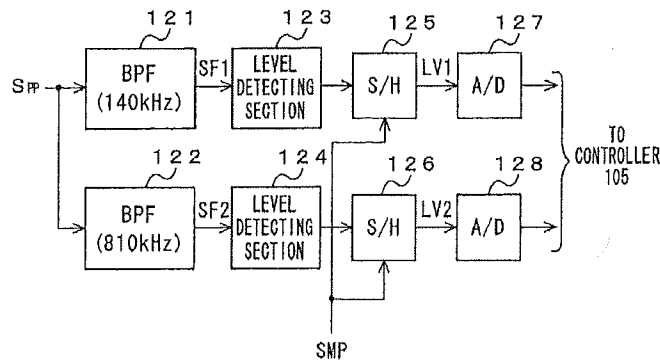
In particular, in the first detecting embodiment, Ogihara filters the push-pull signal through a first band pass filter corresponding to the frequency of wobbles for a first type of medium, and also filters the push-pull signal through a second band pass filter corresponding to the frequency of wobbles for a second type of medium. Here, the described wobble frequencies are used for clock synchronization, and would be different for different media types.

By comparing a resultant LV1 output amplitude from the first band pass filter to resultant LV2 output amplitude from the second band pass filter it can be determined which frequency range the input push-pull signal has the greatest energy, i.e., the greater LV output amplitude will identify which of the two frequency ranges of the wobble of the push-pull signal falls within.

Referring to FIG. 3 of Ogihara shown below, two amplitude levels LV1 and LV2, of the respective output signals SF1 and SF2, are required to be extracted from the push-pull signal  $S_{pp}$  for disc type detection. The controller thereafter must compare these two amplitude levels.

FIG. 3

118



More particularly, as explained in paragraph [0036] of Ogihara, the controller 105 identifies a disc type by first comparing two detection amplitude levels LV1 and LV2 (generating "a result" of their comparison), and then selectively compares either of the detected amplitude levels with a predetermined level based on the comparison of the two detected amplitude levels.

Thus, in Ogihara, two detected amplitude levels are necessary for any disc type detection. Further, in Ogihara the two detected amplitude levels can thereafter be compared to each other to determine the underlying type of optical medium that is being evaluated. See FIGS. 4A-4C of Ogihara.

Paragraphs [0036], [0040], and [0041] of Ogihara specifically explain:

The controller 105 performs the identification of the mounted optical disk in the following manner by use of the detection levels LV1, LV2. Specifically, in the case where the relationship of  $LV1 > LV2$  is established and the LV1 is at a predetermined level or higher, the mounted optical disk 101 is identified as a DVD-RW disk which is a recording-capable disk of a first kind. In the case where the relationship of  $LV1 > LV2$  is established and the LV2 is at a predetermined level or higher, the mounted optical disk 101 is identified as a DVD+RW disk which is a recording capable disk of a second kind. Furthermore, in the case where both the LV1 and LV2 are smaller than predetermined levels, the mounted optical disk 101 is identified as a DVD-ROM disk which is reproduction only disk of a third kind. The results of such identifications are displayed on the displaying section 107 through the control by the controller 105, so as to be announced to the user.

As has been described above, in the embodiment of the present invention, the first and second bandpass filters 121, 122 in the wobble detecting section 118 extract frequency components of the groove wobbles of the DVD-RW disk and the DVD+RW disk respectively from the push-pull signal S PP. Then, the wobble detecting signal 118 supplies to the controller 105 the detection levels LV1, LV2 corresponding to the amplitude levels of the respective frequency components. The controller 105 identifies the mounted optical disk 101, based on the detection levels LV1, LV2.

Therefore, in the embodiment of the present invention, identification whether or not the

mounted optical disk 101 is a DVD-RW disk, and identification whether or not the mounted optical disk 101 is a 11 DVD+RW disk are simultaneously conducted. In this manner, identification whether or not the mounted optical disk 101 is a recording capable optical disk (i.e., a DVD-RW disk, a DVD+RW disk) can be conducted accurately in a short time. Due to this arrangement, even if duplication inhibited digital video signal is recorded in a recording-capable disk neglecting the duplication inhibition, this state can be acknowledged immediately.

Thus, Ogihara sets forth that the particular use of the two band pass filters and two resultant LV1 and LV2 detection levels, by simply comparing the two detection levels, is an accurate and quick process. Further, as stated in paragraph [0041]: "Due to this arrangement, even if duplication inhibited digital video signal is recorded in a recording-capable disk neglecting the duplication inhibition, this state can be acknowledged immediately."

1. Rejection of claims 1, 2, 15, and 27 under 35 U.S.C. §103(a)

Appellant submits that the Final Office Action is in error as to the rejection of claims 1, 2, 15, and 27 as being unpatentable under 35 U.S.C. §103(a) over Ogihara (see, for example, Final Office Action at pages 2) for the reasons described below.

The Final Office Action sets forth a proposed modification of Ogihara to remove the requirement of comparing detection levels LV1 and LV2 to each other, and rather to compare either of the levels to a predetermined reference value.

On page 4 of the Office Action, the Examiner proposes to remove the requirement of detecting whether the input optical medium is a DVD-RW disc, and only determining whether the input optical medium is a DVD+RW or DVD-ROM disc.

Likewise, the Examiner proposes to remove the requirement of detecting whether the input optical medium is a DVD+RW disc, and only determining whether the input optical medium is a DVD-RW or DVD-ROM disc.

The Examiner's rationale for these proposed changes is based on a citation to MPEP § 2144.04, section II-A, 'omission of an element and its function is obvious if the function of the element is not desired.'

Thus, the Examiner proposed that if only a comparison between DVD+RW and DVD-ROM, or DVD-RW and DVD-ROM, were desired, then it would have been obvious to remove the requirement for a second bandpass filter, second detection level, and a comparison between detection levels.

Based upon this proposed modification of Ogihara, the Examiner has suggested that resultant modified Ogihara would thereby compare a detected wobble amplitude with a pre-set wobble amplitude reference value.

In the response of October 20, 2009, applicants had pointed out that one skilled in the art would have understood that the use of two detection levels in Ogihara were essential elements of the invention of Ogihara.

In the Advisory Action issued October 29, 2009, the Examiner stated that it is irrelevant whether the use of two detection levels in Ogihara were essential, or whether the comparison of two detection levels to discern the type of optical medium being evaluated. The Examiner stated that all that was necessary was that the motivation rationale is proper.

Applicants response of November 24, 2009 further cited to MPEP § 2144(II), and attempted to clarify that it would not have been obvious to modify Ogihara as suggested by the Examiner since the detection of the DVD-RW and DVD+RW both were required by Ogihara, and that the focus of Ogihara was in quickly discerning between these two disc types. Applicants further pointed to MPEP § 2143.01 (V and VI), as further support for the non-obviousness of modifying Ogihara as suggested by the Examiner, pointing out that the Examiner's proposed change of Ogihara would change the principle operation of Ogihara and render Ogihara unsatisfactory for its intended purpose.

In the Advisory Action issued December 9, 2009, the Examiner states:

"(1) In response to applicant's argument on page 11 that 'the essentiality of the comparing of the LV1 and LV2 signals in Ogihara et al. cannot be ignored or discounted, and is primarily relevant', the examiner acknowledges that Ogihara et al.'s teaching of comparing the LV1 and LV2 signals is essential to the invention of Ogihara et al., which is primarily directed to discriminating between DVD-RW, DVD+RW, and DVD-ROM discs."

"However, the essentiality of this teaching does not make the Ogihara et al. reference untouchable nor immune from being modified." The Examiner thereafter reiterates the above proposal of removing a requirement for detecting one of the DVD-RW or DVD+RW disc types, and concludes with: "Although this scenario is not expressly taught, suggested, or mentioned in Ogihara et al., one of ordinary skill in the art would have recognized the possibility based on the teaching of Ogihara et al. Furthermore, while applicants repeatedly emphasizes and focuses on the essentiality of the teachings of Ogihara et al. and insists that it would not have been obvious to modify Ogihara et al., it should be noted that there is nothing in the Ogihara et al. reference that criticizes, disparages, nor discredits the proposed modification."

Here, it is respectfully submitted that the Examiner has improperly proposed to modify Ogihara against the express teaching of Ogihara.

The Examiner points out that Ogihara does not criticize, disparage, nor discredit the proposed modification, which is an inherent statement considering the Examiner has already acknowledged that Ogihara fails to disclose or suggest any such elements of the proposed modification of Ogihara.

Further, though MPEP §§ 2144(II) and 2143.01 (V and VI), and corresponding case law, particularly point out that it is not an obvious operation to modify a reference away from essential elements.

Again, the Examiner has acknowledged that the use of the LV1 and LV2 detection levels is an essential element of the invention of Ogihara.

This is thus contrary to the Examiner's original rationale for modifying Ogihara, 'omission of an element and its function is obvious if the function of the element is not desired.'

Regardless of the Examiner proposed modifications of Ogihara, the features the Examiner is attempting to remove from Ogihara are desired.

What is not desired, and not supported by any evidence in the record, is the selective detection of only a DVD-RW and DVD-ROM or a DVD+RW and DVD-ROM. There is no evidence in the record that supports any such need or desire, or any such suggestion that the detection of at least the DVD-RW and DVD+RW disc types is not desired.

Conversely, one skilled in the art would know that there are plural types of DVD disc types.

Further, based on FIGS. 4A-C of Ogihara, for example, one skilled in the art would understand that if the Examiner's proposed modification of Ogihara were implemented, the system would not work or would have an impermissible error rate

Thus, if a user were to insert a DVD-RW disc, when only the DVD+RW and DVD-ROM discs were detected for, the system would incorrectly identify the disc as a DVD-ROM disc. If the user were to insert a DVD+RW disc, when only the DVD-RW and DVD-ROM discs were detected for, then again the system would incorrectly identify the disc as a DVD-ROM disc.

Accordingly, the detection of both of DVD-RW and DVD+RW, are necessary when detecting for whether the input disc is a DVD-ROM.

Therefore, one skilled in the art would not modify Ogihara as suggested by the Examiner, both as the technique of using the LV1 and LV2 detection levels is essential to Ogihara and



because the Examiner's proposed modification of Ogihara would make the system less reliable, and potentially not work. The Examiner's proposed modification of Ogihara would render the invention of Ogihara inoperable or undesirable for its intended purposes.

It respectfully submitted that the Examiner's proposed modification of Ogihara would not have been obvious.

It is further respectfully submitted that the Examiner has not met the burden of a prima facie obviousness case, as the proposed modification of Ogihara is further based upon the Examiner's conclusion of what would or would not have been desired by one skilled in the art, and specifically that one skilled in the art would not desire to detect both the DVD-RW and DVD+RW disc types, or that one skilled in the art would only desire to detect one of the DVD-RW or DVD+RW types.

Accordingly, it is respectfully requested that this rejection of claims 1, 2, 15, and 27 be withdrawn, claims 1, 2, 15, and 27 be found allowable over Ogihara, and claims 1, 2, 15, and 27 be allowed.

2. Rejection of claims 5, 16, and 28 under 35 U.S.C. §103(a)

By way of only an example, dependent claim 5 recites:

wherein the system controller determines that the recording medium is a DVD(+) type recording medium when the wobble amplitude is higher than the reference value and that the recording medium is a DVD(-) type recording medium when the wobble amplitude is not higher than the reference value.

As claims 5, 16, and 28 respectively depend from claims 1, 15, and 27, the above is respectfully equally applicable to the allowability of claims 5, 16, and 28.

In addition, based upon the Examiner's proposed modification of Ogihara, the proposed combination would never need or desire the capability to determine whether the recording medium is a DVD(+) type recording medium or a DVD(-) recording medium.

Further, again as noted above, FIGS. 4A-C of Ogihara demonstrate that if a DVD-RW disc were mistakenly inserted into the system proposed by the Examiner, i.e., a system that would only detect for DVD+RW and DVD-ROM disc types, the system would mistakenly believe the inserted disc was a DVD-ROM disc type.

Thus, the Examiner's proposed modification of Ogihara would not be reliable and would incorrectly identify an inserted DVD-RW disc to be a DVD-ROM disc.

Accordingly, it is respectfully requested that this rejection of claims 5, 16, and 28 be withdrawn, claims 5, 16, and 28 be found allowable over Ogihara, and claims 5, 16, and 28 be

allowed.

3. Rejection of claims 3-4, 17-18, and 29-30 under 35 U.S.C. §103(a)

By way of only an example, dependent claim 3 at least recites:

wherein the wobble amplitude detector detects a peak-to-peak value of the output signal of the RF amplifier and identifies the detected peak-to-peak value as the wobble amplitude.

As claims 3-4, 17-18, and 29-30 respectively depend from claims 1, 15, and 27, the above is respectfully equally applicable to the allowability of claims 3-4, 17-18, and 29-30.

In addition, it is respectfully submitted that the Examiner's proposed modification of Ogihara would not disclose all the claimed features of claims 3-4, 17-18, and 29-30.

In particular, the modification of Ogihara would not disclose or suggest to either measure a peak-to-peak output value of the RF amplifier as a wobble amplitude.

Rather, based on the Examiner's proposed modification of Ogihara, all the system would desire is to know a resultant detection level, i.e., a single peak value. That single peak value is sampled and held based on a clock.

In Ogihara, the LV1 and LV2 detection levels are similarly only peak values of the detected filtered RF signal as determined by the level detection sections.

See Ogihara in paragraph [0029], reciting: "The wobble detecting section 118 includes: a first level detecting section 123 for detecting the amplitude level of the output signal SF1 from the first bandpass filter 121; and a second level detecting section 124 for detecting the amplitude level of the output signal SF2 from the second bandpass filter 122. Each of these first and second level detecting sections 123, 124 is constituted by a rectifying and smoothing circuit, for example." (Emphasis added).

Thus, the first and second detection sections include rectifying and smoothing circuits, and thus would only detect a peak, not peak-to-peak values from the RF amplifier as a wobble amplitude.

Accordingly, in addition to the above, it is further respectfully requested that this rejection of claims 3-4, 17-18, and 29-30 be withdrawn, claims 3-4, 17-18, and 29-30 be found allowable over Ogihara, and claims 3-4, 17-18, and 29-30 be allowed.

4. Rejection of claims 6, 31, 39, and 42 under 35 U.S.C. §103(a)

By way of only an example, independent claim 6 at least sets forth:

a system controller to discriminate the recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is about 16 nm.

It is respectfully submitted that the above remarks regarding claims 1, 2, 15, and 27 are equally applicable to the allowability of claim 6, 31, 39, and 42.

In addition, it is respectfully submitted that the Office Action has failed to set forth a prima facie obviousness case regarding the added requirement of the reference value being about 16nm.

As explained in the present application, the choice of the claimed 16nm is very specific due to the physical differences in amplitude of wobbles between different types of disc. As shown in FIG. 2 of the present application, the actual physical amplitude of the wobble is shown, and the specification explains that for DVD-R/-RW discs the range of this physical wobble amplitude would be between 7-14nm, and that for DVD+R/+RW discs the range of this physical wobble amplitude would be between 18-30nm.

Accordingly, the claimed reference value being about 16nm has been particularly chosen based upon the implementation of the claimed invention.

Conversely, the Final Office Action, on page 5, states that the choices for reference values would have been an "obvious matter of optimization of value/ranges discoverable through routine experimentation."

However, as noted above, the physical systems of Ogihara and embodiments of the present invention are different, i.e., Ogihara uses a rectifier and only needs a single peak value to compare to a similarly rectified single peak value, or based upon the Office Action proposed modification of Ogihara, only a single peak value would be need to compare to a single predetermined reference value.

Regardless of the system chosen for Ogihara, neither the original Ogihara system nor the Examiner proposed modification of the same, would use the particularly claimed 16nm.

Thus, regardless of any potential optimization of Ogihara, the reference value would not have been 16nm. As noted above, this 16nm is based upon physical wobble amplitudes, while the detection levels of Ogihara are based upon alternative gauges and reference levels.

Accordingly, in addition to the above, it is further respectfully requested that this rejection of claims 6, 31, 39, and 42 be withdrawn, claims 6, 31, 39, and 42 be found allowable over Ogihara, and claims 6, 31, 39, and 42 be allowed.

5. Rejection of claims 7, 32, 40, and 43 under 35 U.S.C. §103(a)

By way of only an example, independent claim 7 at least sets forth:

a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is less than 18 nm.

It is respectfully submitted that the above remarks regarding claims 1, 2, 15, and 27 are equally applicable to the allowability of claims 7, 32, 40, and 43. In addition, for at least the above remarks regarding the allowability of claim 6, it is further respectfully submitted that claims 7, 32, 40, and 43 are equally allowable.

Accordingly, in addition to the above, it is further respectfully requested that this rejection of claims 7, 32, 40, and 43 be withdrawn, claims 7, 32, 40, and 43 be found allowable over Ogihara, and claims 7, 32, 40, and 43 be allowed.

6. Rejection of claims 8, 33, 41, and 44 under 35 U.S.C. §103(a)

By way of only an example, independent claim 8 at least sets forth:

a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is greater than 14 nm.

It is respectfully submitted that the above remarks regarding claims 1, 2, 15, and 27 are equally applicable to the allowability of claims 8, 33, 41, and 44. In addition, for at least the above remarks regarding the allowability of claims 6 and 7, it is further respectfully submitted that claims 8, 33, 41, and 44 are equally allowable.

Accordingly, in addition to the above, it is further respectfully requested that this rejection of claims 8, 33, 41, and 44 be withdrawn, claims 8, 33, 41, and 44 be found allowable over Ogihara, and claims 8, 33, 41, and 44 be allowed.

VIII. CONCLUSION

Appellant submits that the Office fails to establish that claims 1-8, 15-18, 27-33 and 39-44, are obvious under 35 USC §103(a) over the cited documents. Thus, reversal of the Examiner's rejections is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees required in connection with the filing of this Appeal Brief to our Deposit Account No. 19-3935.

Respectfully submitted,

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IV. CLAIMS APPENDIX

1. (REJECTED) A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;  
a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and  
a system controller to discriminate the recording medium type of the recording medium by comparing the wobble amplitude with a pre-set wobble amplitude reference value.
2. (REJECTED) The apparatus of claim 1, wherein the RF amplifier detects a push-pull signal by determining an amount of the reflected light and provides the detected push-pull signal to the wobble amplitude detector.
3. (REJECTED) The apparatus of claim 2, wherein the wobble amplitude detector detects a peak-to-peak value of the output signal of the RF amplifier and identifies the detected peak-to-peak value as the wobble amplitude.
4. (REJECTED) The apparatus of claim 1, wherein the wobble amplitude detector detects a peak-to-peak value of the output signal of the RF amplifier and identifies the detected peak-to-peak value as the wobble amplitude.
5. (REJECTED) The apparatus of claim 1, wherein the system controller determines that the recording medium is a DVD(+) type recording medium when the wobble amplitude is higher than the reference value and that the recording medium is a DVD(-) type recording medium when the wobble amplitude is not higher than the reference value.
6. (REJECTED) A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;  
a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and  
a system controller to discriminate the recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is about

16 nm.

7. (REJECTED) A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;  
a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and  
a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is less than 18 nm.

8. (REJECTED) A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from a recording medium;  
a wobble amplitude detector to detect only one amplitude of a wobble formed on the recording medium based on an output signal of the RF amplifier to discriminate a recording medium type of the recording medium; and  
a system controller to discriminate a recording medium type of the recording medium by comparing the wobble amplitude with a reference value, wherein the reference value is greater than 14 nm.

9. (WITHDRAWN) A recording medium type discriminating apparatus, comprising:  
a radio frequency (RF) amplifier to output a signal based on light reflected from the recording medium;  
an automatic gain controller (AGC) to control an amplitude gain of the output signal of the RF amplifier so that the output signal of the RF amplifier has a constant level; and  
a system controller to discriminate a recording medium type of recording medium by comparing a gain value used in the AGC with a reference value.

10. (WITHDRAWN) The apparatus of claim 9, wherein the RF amplifier detects a push-pull signal by determining an amount of the reflected light and provides the detected push-pull signal to the AGC.

11. (WITHDRAWN) The apparatus of claim 9, wherein the system controller monitors

the gain value of the AGC and determines that the recording medium is a DVD(-) type recording medium when the gain value is higher than the reference value and that the recording medium is a DVD(+) type recording medium when the wobble amplitude is not higher than the reference value.

12. (WITHDRAWN) The apparatus of claim 9, wherein the reference value is about 16 nm.

13. (WITHDRAWN) The apparatus of claim 9, wherein the reference value is less than 18 nm.

14. (WITHDRAWN) The apparatus of claim 9, wherein the reference value is greater than 14 nm.

15. (REJECTED) A recording medium type discriminating method, comprising:  
detecting only one amplitude of a wobble formed on a recording medium using light reflected from the recording medium to discriminate a recording medium type of the recording medium; and

discriminating the recording medium type of the recording medium by comparing the detected wobble amplitude with a pre-set wobble amplitude reference value.

16. (REJECTED) The method of claim 15, wherein the discrimination of the recording medium type of the recording medium includes determining that the recording medium is a DVD(+) type recording medium when the amplitude of the wobble is higher than the reference value and that the recording medium is a DVD(-) type recording medium when the amplitude of the wobble is not higher than the reference value.

17. (REJECTED) The method of claim 16, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected RF (radio frequency) signal, corresponding to an amount of light reflected from the recording medium, and identifying the amplitude of the wobble as being the peak-to-peak value.

18. (REJECTED) The method of claim 15, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected radio frequency (RF) signal, corresponding to an amount of light reflected from the recording medium, and identifying the



amplitude of the wobble as being the peak-to-peak value.

19-21. (CANCELLED)

22. (WITHDRAWN) A recording medium type discriminating method, comprising :  
automatically controlling an amplitude gain value of a radio frequency (RF) signal  
detected using light reflected from a recording medium so that an amplitude of the RF signal can  
have a constant level; and

discriminating a recording medium type of the recording medium by comparing the  
amplitude gain value with a reference value.

23. (WITHDRAWN) The method of claim 22, wherein the discrimination of the  
recording medium type of the recording medium includes monitoring the amplitude gain value  
and determining that the recording medium is a DVD(-) type recording medium when the gain  
value is higher than the reference value and that the recording medium is a DVD(+) type  
recording medium when the wobble amplitude is not higher than the reference value.

24. (WITHDRAWN) The method of claim 22, wherein the reference value is about 16  
nm.

25. (WITHDRAWN) The method of claim 22, wherein the reference value is less than  
18 nm.

26. (WITHDRAWN) The method of claim 22, wherein the reference value is greater  
than 14 nm.

27. (REJECTED) A storage medium comprising computer readable code to control a  
computer to perform a recording medium type discrimination method, the method:

detecting only one amplitude of a wobble formed on a recording medium using light  
reflected from the recording medium to discriminate a recording medium type of the recording  
medium; and

discriminating the recording medium type of the recording medium by comparing the  
detected wobble amplitude with a pre-set wobble amplitude reference value.

28. (REJECTED) The medium of claim 27, wherein the discrimination of the

recording medium type of the recording medium includes determining that the recording medium is a DVD(+) type recording medium when the amplitude of the wobble is higher than the reference value and that the recording medium is a DVD(-) type recording medium when the amplitude of the wobble is not higher than the reference value.

29. (REJECTED) The medium of claim 28, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected RF (radio frequency) signal, corresponding to an amount of light reflected from the recording medium, and identifying the amplitude of the wobble as being the peak-to-peak value.

30. (REJECTED) The medium of claim 27, wherein the detection of the amplitude of the wobble includes detecting a peak-to-peak value of a detected radio frequency (RF) signal, corresponding to an amount of light reflected from the recording medium, and identifying the amplitude of the wobble as being the peak-to-peak value.

31. (REJECTED) The medium of claim 27, wherein the pre-set wobble amplitude reference value is about 16 nm.

32. (REJECTED) The medium of claim 27, wherein the pre-set wobble amplitude reference value is less than 18 nm.

33. (REJECTED) The medium of claim 27, wherein the pre-set wobble amplitude reference value is greater than 14 nm.

34. (WITHDRAWN) A storage medium comprising computer readable code to control a computer to perform a recording medium type discrimination method, the method comprising:

automatically controlling an amplitude gain value of a radio frequency (RF) signal detected using light reflected from a recording medium so that the amplitude of the RF signal can have a constant level; and

discriminating a recording medium type of the recording medium by comparing the amplitude gain value with a pre-set wobble amplitude reference value.

35. (WITHDRAWN) The medium of claim 34, wherein the discrimination of the recording medium type of the recording medium includes monitoring the amplitude gain value

and determining that the recording medium is a DVD(-) type recording medium when the gain value is higher than the reference value and that the recording medium is a DVD(+) type recording medium when the wobble amplitude is not higher than the reference value.

36. (WITHDRAWN) The medium of claim 34, wherein the pre-set wobble amplitude reference value is about 16 nm.

37. (WITHDRAWN) The medium of claim 34, wherein the pre-set wobble amplitude reference value is less than 18 nm.

38. (WITHDRAWN) The medium of claim 34, wherein the pre-set wobble amplitude reference value is greater than 14 nm.

39. (REJECTED) The apparatus of claim 1, wherein the pre-set wobble amplitude reference value is about 16 nm.

40. (REJECTED) The apparatus of claim 1, wherein the pre-set wobble amplitude reference value is less than 18 nm.

41. (REJECTED) The apparatus of claim 1, wherein the pre-set wobble amplitude reference value is greater than 14 nm.

42. (REJECTED) The method of claim 15, wherein the pre-set wobble amplitude reference value is about 16 nm.

43. (REJECTED) The method of claim 15, wherein the pre-set wobble amplitude reference value is less than 18 nm.

44. (REJECTED) The method of claim 15, wherein the pre-set wobble amplitude reference value is greater than 14 nm.

X. EVIDENCE APPENDIX

None.

XI. RELATED PROCEEDINGS APPENDIX

None.